

=====

Sequence Listing was accepted.

See attached Validation Report.

If you need help call the Patent Electronic Business Center at (866)  
217-9197 (toll free).

Reviewer: Anne Corrigan

Timestamp: [year=2008; month=5; day=19; hr=14; min=40; sec=51; ms=341; ]

=====

Application No: 10092919

Version No: 1.1

Input Set:

Output Set:

Started: 2008-05-19 14:38:27.856

Finished: 2008-05-19 14:38:33.465

Elapsed: 0 hr(s) 0 min(s) 5 sec(s) 609 ms

Total Warnings: 102

Total Errors: 42

No. of SeqIDs Defined: 102

Actual SeqID Count: 102

Error code	Error Description
W 213	Artificial or Unknown found in <213> in SEQ ID (1)
E 257	Invalid sequence data feature in <221> in SEQ ID (1)
E 257	Invalid sequence data feature in <221> in SEQ ID (1)
W 213	Artificial or Unknown found in <213> in SEQ ID (2)
E 257	Invalid sequence data feature in <221> in SEQ ID (2)
E 257	Invalid sequence data feature in <221> in SEQ ID (2)
W 213	Artificial or Unknown found in <213> in SEQ ID (3)
E 257	Invalid sequence data feature in <221> in SEQ ID (3)
E 257	Invalid sequence data feature in <221> in SEQ ID (3)
W 213	Artificial or Unknown found in <213> in SEQ ID (4)
E 257	Invalid sequence data feature in <221> in SEQ ID (4)
E 257	Invalid sequence data feature in <221> in SEQ ID (4)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (4)
W 213	Artificial or Unknown found in <213> in SEQ ID (5)
E 257	Invalid sequence data feature in <221> in SEQ ID (5)
E 257	Invalid sequence data feature in <221> in SEQ ID (5)
W 213	Artificial or Unknown found in <213> in SEQ ID (6)
E 257	Invalid sequence data feature in <221> in SEQ ID (6)
E 257	Invalid sequence data feature in <221> in SEQ ID (6)

**Input Set:**

**Output Set:**

**Started:** 2008-05-19 14:38:27.856  
**Finished:** 2008-05-19 14:38:33.465  
**Elapsed:** 0 hr(s) 0 min(s) 5 sec(s) 609 ms  
**Total Warnings:** 102  
**Total Errors:** 42  
**No. of SeqIDs Defined:** 102  
**Actual SeqID Count:** 102

Error code	Error Description
W 213	Artificial or Unknown found in <213> in SEQ ID (7)
E 257	Invalid sequence data feature in <221> in SEQ ID (7)
E 257	Invalid sequence data feature in <221> in SEQ ID (7)
W 213	Artificial or Unknown found in <213> in SEQ ID (8)
W 213	Artificial or Unknown found in <213> in SEQ ID (9)
W 213	Artificial or Unknown found in <213> in SEQ ID (10)
W 213	Artificial or Unknown found in <213> in SEQ ID (11)
W 213	Artificial or Unknown found in <213> in SEQ ID (12)
W 213	Artificial or Unknown found in <213> in SEQ ID (13)
W 213	Artificial or Unknown found in <213> in SEQ ID (14)
W 213	Artificial or Unknown found in <213> in SEQ ID (15)
W 213	Artificial or Unknown found in <213> in SEQ ID (16)
W 213	Artificial or Unknown found in <213> in SEQ ID (17)
W 213	Artificial or Unknown found in <213> in SEQ ID (18)
W 213	Artificial or Unknown found in <213> in SEQ ID (19)
W 213	Artificial or Unknown found in <213> in SEQ ID (20) This error has occurred more than 20 times, will not be displayed
E 257	Invalid sequence data feature in <221> in SEQ ID (47)
E 257	Invalid sequence data feature in <221> in SEQ ID (47)
E 257	Invalid sequence data feature in <221> in SEQ ID (49)
E 257	Invalid sequence data feature in <221> in SEQ ID (49)
E 257	Invalid sequence data feature in <221> in SEQ ID (51)
E 257	Invalid sequence data feature in <221> in SEQ ID (51)

**Input Set:**

**Output Set:**

**Started:** 2008-05-19 14:38:27.856

**Finished:** 2008-05-19 14:38:33.465

**Elapsed:** 0 hr(s) 0 min(s) 5 sec(s) 609 ms

**Total Warnings:** 102

**Total Errors:** 42

**No. of SeqIDs Defined:** 102

**Actual SeqID Count:** 102

Error code	Error Description
------------	-------------------

# SEQUENCE LISTING

<110> Hanson, Lars A.  
 Baltzer, Lars  
 Mattsby Baltzer, Inger  
 Dolphin, Gunnar T.

<120> Peptides Based on the Sequence of Human Lactoferrin  
 and Their Use

<130> 003300 723

<140> 10092919  
 <141> 2008-05-07

<150> US 09/743,107  
 <151> 2001-08-21

<150> PCT/SE99/01230  
 <151> 2000-09-29

<150> SE 9802441 7  
 <151> 1998-07-06

<150> SE 9802562 0  
 <151> 1998-07-17

<150> SE 9804614 7  
 <151> 1998-12-29

<160> 102

<170> PatentIn version 2.1

<210> 1  
 <211> 25  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> MOD\_RES  
 <222> (1)  
 <223> ACETYLATION

<220>  
 <221> PEPTIDE  
 <222> (1)  
 <223> Amino acid 1 is Xaa wherein Xaa = Glu or no amino acid.

<220>  
 <221> PEPTIDE  
 <222> (2)  
 <223> Amino acid 2 is Xaa wherein Xaa = Ala or no amino acid.

<220>  
 <221> PEPTIDE

<222> (5)  
 <223> Amino acid 5 is Xaa wherein Xaa = Cys or Ala.  
  
 <220>  
 <221> PEPTIDE  
  
 <222> (7)  
 <223> Amino acid 7 is Xaa wherein Xaa = Gln or Lys.  
  
 <220>  
 <221> PEPTIDE  
 <222> (11)  
 <223> Amino acid 11 is Xaa wherein Xaa = Asn or Asp.  
  
 <220>  
 <221> PEPTIDE  
 <222> (17)..(25)  
 <223> Amino acids 17 25 are Xaa wherein Xaa = Gly, Pro, Pro, Val, Ser,  
 Cys, Ile, Lys, Arg  
  
 <220>  
 <221> MOD\_RES  
 <222> (25)  
 <223> AMIDATION  
  
 <220>  
 <223> Description of Artificial Sequence: of natural or artificial  
 origin, corresponding to modification of the sequence  
 consisting of aa 16 40 in human lactoferrin  
  
 <400> 1  
  
 Xaa Xaa Thr Lys Xaa Phe Xaa Trp Gln Arg Xaa Met Arg Lys Val Arg  
 1 5 10 15  
  
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 20 25  
  
 <210> 2  
 <211> 25  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <221> MOD\_RES  
 <222> (1)  
 <223> ACETYLATION  
  
 <220>  
 <221> MOD\_RES  
 <222> (25)  
 <223> AMIDATION  
  
 <220>  
 <223> Description of Artificial Sequence: of natural or  
 artificial origin, corresponding to a modification  
 of the sequence consisting of amino acids 16 40 in

human lactoferrin

<400> 2

Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg  
1 5 10 15

Gly Pro Pro Val Ser Cys Ile Lys Arg  
20 25

<210> 3

<211> 25

<212> PRT

<213> Artificial Sequence

<220>

<221> MOD\_RES

<222> (1)

<223> ACETYLATION

<220>

<221> MOD\_RES

<222> (25)

<223> AMIDATION

<220>

<221> DISULFID

<222> (5)..(22)

<220>

<223> Description of Artificial Sequence: of natural or  
artificial origin, corresponding to a modification  
of the sequence consisting of amino acids 16 40 in  
human lactoferrin

<400> 3

Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg  
1 5 10 15

Gly Pro Pro Val Ser Cys Ile Lys Arg  
20 25

<210> 4

<211> 23

<212> PRT

<213> Artificial Sequence

<220>

<221> MOD\_RES

<222> (1)

<223> ACETYLATION

<220>

<221> MOD\_RES

<222> (23)..(23)

<223> AMIDATION

<220>

<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to a modification of the sequence consisting of amino acids 18 40 in human lactoferrin

<400> 4

Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg Gly Pro

1 5 10 15

Pro Val Ser Cys Ile Lys Arg

20

<210> 5

<211> 23

<212> PRT

<213> Artificial Sequence

<220>

<221> MOD\_RES

<222> (1)

<223> ACETYLATION

<220>

<221> MOD\_RES

<222> (23)

<223> AMIDATION

<220>

<221> DISULFID

<222> (3)..(20)

<220>

<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to a modification of the sequence consisting of amino acids 18 40 in human lactoferrin

<400> 5

Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg Gly Pro

1 5 10 15

Pro Val Ser Cys Ile Lys Arg

20

<210> 6

<211> 14

<212> PRT

<213> Artificial Sequence



<220>  
<221> MOD\_RES  
<222> (1)  
<223> ACETYLATION

<220>  
<221> MOD\_RES  
<222> (14)  
<223> AMIDATION

<220>  
<223> Description of Artificial Sequence: of natural or  
artificial origin, corresponding to a modification  
  
of the sequence consisting of amino acids 18 31 in  
human lactoferrin

<400> 6  
Thr Lys Ala Phe Lys Trp Gln Arg Asp Met Arg Lys Val Arg  
1 5 10

<210> 7  
<211> 14  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> MOD\_RES  
<222> (1)  
<223> ACETYLATION

<220>  
<221> MOD\_RES  
<222> (14)  
<223> AMIDATION

<220>  
<221> BINDING  
<222> (5)..(9)  
<223> LACTAM

<220>  
<223> Description of Artificial Sequence: of natural or  
artificial origin, corresponding to a modification  
of the sequence consisting of aa 18 31 in human  
lactoferrin; a lactam is formed between aa 5 and 9

<400> 7  
Thr Lys Ala Phe Lys Trp Gln Arg Asp Met Arg Lys Val Arg  
1 5 10

<210> 8

<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Peptide of  
natural or artificial origin consisting of the  
amino acids in positions 12 31 of the protein  
human lactoferrin

<400> 8  
Val Ser Gln Pro Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met  
1 5 10 15  
  
Arg Lys Val Arg  
20

<210> 9  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Peptide of  
natural or artificial origin consisting of the  
amino acids in positions 12 18 of the protein  
human lactoferrin

<400> 9  
Val Ser Gln Pro Glu Ala Thr  
1 5

<210> 10  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Peptide of  
natural or artificial origin consisting of the  
amino acids in positions 13 19 of the protein  
human lactoferrin

<400> 10  
Ser Gln Pro Glu Ala Thr Lys  
1 5

<210> 11  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of  
natural or artificial origin consisting of the  
amino acids in positions 14 20 of the protein  
human lactoferrin

<400> 11

Gln Pro Glu Ala Thr Lys Cys  
1 5

<210> 12

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of  
  
natural or artificial origin consisting of the  
amino acids in positions 15 21 of the protein  
human lactoferrin

<400> 12

Pro Glu Ala Thr Lys Cys Phe  
1 5

<210> 13

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of  
natural or artificial origin consisting of the  
amino acids in positions 16 22 of the protein  
human lactoferrin

<400> 13

Glu Ala Thr Lys Cys Phe Gln  
1 5

<210> 14

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of  
natural or artificial origin consisting of the  
amino acids in positions 17 23 of the protein

human lactoferrin

<400> 14

Ala Thr Lys Cys Phe Gln Trp  
1 5

<210> 15

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of  
natural or artificial origin consisting of the  
amino acids in positions 18 24 of the protein  
human lactoferrin

<400> 15

Thr Lys Cys Phe Gln Trp Gln  
1 5

<210> 16

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of  
natural or artificial origin consisting of the  
amino acids in positions 19 25 of the protein  
human lactoferrin

<400> 16

Lys Cys Phe Gln Trp Gln Arg  
1 5

<210> 17

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of  
natural or artificial origin consisting of the  
amino acids in positions 20 26 of the protein  
human lactoferrin

<400> 17

Cys Phe Gln Trp Gln Arg Asn  
1 5

<210> 18  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Peptide of  
natural or artificial origin consisting of the  
amino acids in positions 21 27 of the protein  
human lactoferrin

<400> 18  
Phe Gln Trp Gln Arg Asn Met  
1 5

<210> 19  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Peptide of  
  
natural or artificial origin consisting of the  
amino acids in positions 22 28 of the protein  
human lactoferrin

<400> 19  
Gln Trp Gln Arg Asn Met Arg  
1 5

<210> 20  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Peptide of  
natural or artificial origin consisting of the  
amino acids in positions 23 29 of the protein  
human lactoferrin

<400> 20  
Trp Gln Arg Asn Met Arg Lys  
1 5

<210> 21  
<211> 7  
<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 24 30 of the protein human lactoferrin

<400> 21

Gln Arg Asn Met Arg Lys Val  
1 5

<210> 22

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 25 31 of the protein human lactoferrin

<400> 22

Arg Asn Met Arg Lys Val Arg  
1 5

<210> 23

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 16 23 of the protein human lactoferrin

<400> 23

Glu Ala Thr Lys Cys Phe Gln Trp  
1 5

<210> 24

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 16 24 of the protein

human lactoferrin

<400> 24

Glu Ala Thr Lys Cys Phe Gln Trp Gln  
1 5

<210> 25

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of  
natural or artificial origin consisting of the  
amino acids in positions 16 25 of the protein  
human lactoferrin

<400> 25

Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg  
1 5 10

<210> 26

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of  
  
natural or artificial origin consisting of the  
amino acids in positions 16 26 of the protein  
human lactoferrin

<400> 26

Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn  
1 5 10

<210> 27

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of  
natural or artificial origin consisting of the  
amino acids in positions 16 27 of the protein  
human lactoferrin

<400> 27

Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met  
1 5 10

<210> 28

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 16 28 of the protein human lactoferrin

<400> 28

Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg  
1 5 10

<210> 29

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 16 29 of the protein human lactoferrin

<400> 29

Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys  
1 5 10

<210> 30

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 16 30 of the protein human lactoferrin

<400> 30

Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val  
1 5 10 15

<210> 31

<211> 16

<212> PRT



<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 16 31 of the protein human lactoferrin

<400> 31

Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg  
1 5 10 15

<210> 32

<211> 19

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 13 31 of the protein human lactoferrin

<400> 32

Ser Gln Pro Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg  
1 5 10 15

Lys Val Arg

<210> 33

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 14 31 of the protein human lactoferrin

<400> 33

Gln Pro Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys  
1 5 10 15

Val Arg

<210> 34

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of  
natural or artificial origin consisting of the  
amino acids in positions 15 31 of the protein  
human lactoferrin

<400> 34

Pro Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val  
1 5 10 15

Arg

<210> 35

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of  
natural or artificial origin consisting of the  
amino acids in positions 17 31 of the protein  
human lactoferrin!

<400> 35

Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg  
1 5 10 15

<210> 36

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of  
  
natural or artificial origin consisting of the  
amino acids in positions 18 31 of the protein  
human lactoferrin

<400> 36

Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg  
1 5 10

<210> 37

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of  
natural or artificial origin consisting of the  
amino acids in positions 19 31 of the protein  
human lactoferrin

<400> 37

Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg  
1 5 10

<210> 38

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of  
natural or artificial origin consisting of the  
amino acids in positions 20 31 of the protein  
human lactoferrin

<400> 38

Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg  
1 5 10

<210> 39

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of  
natural or artificial origin consisting of the  
amino acids in positions 21 31 of the protein  
human lactoferrin

<400> 39

Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg